VINCENT'S ANGINA.

By Andrew T. McClintock, M.D.,
WILKES-BARRE, PA.

Certain anginas have been described by Plaut and Vincent as due to two organisms, one a fusiform bacillus and the other a spirillum, the two forms being considered either as stages in the life of one organism or as an example of symbiosis. The pathogenicity of these is still questioned in general, but especially often in particular. The difficulty of culture has prevented more frequent recognition, since smears are too rarely made. The ultimate test, namely, animal inoculation, has been remarkably unsuccessful.

The author once obtained from the peritoneal cavity of a sputum-injected mouse a smear which was typical for the average throat, and included Vincent's organisms. Pneumococcus Group II was obtained from the heart's blood. These results were never duplicated.

As to the occurrence of these organisms in general:

Berkeley speaks of their occurrence in healthy throats.

Bennerdoin found them in 64 per cent. of 227 cases of diphtheria, 73 per cent. of scarlet fever cases, 50 per cent. of streptococcic sore throats, 50 per cent. of cases of stomatitis, 67 per cent. of 31 cases of syphilis, 58 per cent. of 43 healthy cases.

Wingrave, who found them present in 80 per cent. of normal individuals, says they are frequently in nose discharges, in sinuses, in the tympanic cavity, etc. He denies their pathogenicity in man.

In 100 individuals having healthy throats, smears were made by the author, and in 43 per cent. Vincent's organisms were demonstrated. These individuals included nurses, patients, orderlies, doctors, and dispensary cases.

Leo Green speaks of Vincent's angina as occurring after measles, scarlet fever, whooping cough, and diphtheria. The late stages of severe cases are in reality the disease called noma. He reports an epidemic in a children's hospital as caused through the medium of a spoon.

Holstead reports it as a known specific cause of laryngitis, bronchitis, bronchopneumonia, mastoiditis, gangrene, ulcers of the penis and genitalia, abscesses, and general pyemia.

Tunnicliff and Wright report two cases of this variety of angina: the ulcerative or common form, and another the membranous or diphtheritic form. This is rare, occurring in 2 per cent. only of Rolleston's cases. In this latter form the bacillus alone occurs.

Rolleston considers the ulcerative as only the later stage. It would seem improbable, though not impossible, that were these organisms, which are found so frequently together in ulcerative conditions of the throat, purely saprophytic, in certain rare cases

one should appear to precede the other. It would seem that they represent stages of one organism, certainly the spirillum never appears alone, and the bacillus always develops first on culture media.

Green cured five cases with salvarsan, a known spirillicide. Unfortunately we do not know the effects of salvarsan in general in throat cases.

In the cases on which this article is based, smears stained with gentian violet were used in all. The diagnosis was made in three by a dark-ground illumination. In all smear-taking the necrotic material itself was obtained, as far as possible exclusively, and smeared. In one case an emulsion of this was injected into a mouse without result.

Of the 12 cases to be reported, 4 were individuals from whom smears had been taken previously in the study of healthy throats. Of these, 2 showed Vincent's organisms when in a healthy condition, and later suffered from a disease apparently due to these organisms. One showed it previously, but a later sore throat was streptococcic; and one having a smear negative for Vincent's previously, later developed a Vincent's follicular tonsillitis.

CASE I.—C. J., angina, malaise. Temperature never over 99.4°. Deep ulcer under white necrotic mass. A diagnosis of syphilis was made. By dark-field illumination from smear following alcoholic application for one minute, and taken with the blood, motile spirillæ were seen varying somewhat in number and sharpness of curves, but all showed few and low curves. Bacilli were also seen. A smear showed the two organisms described by Vincent. The ulcer remained after all signs and symptoms had disappeared.

CASE II.—Mr. M.; stiff neck first, four days later slight soreness in throat; never any other symptoms and never any fever. Left tonsil showed irregular white mass over easily bleeding ulcerous surface. A few white spots were on the other tonsil. White mass was hillocky and came off in pieces. Dark-ground examination of smear showed spirillæ as in Case I. Smear showed spirillæ and bacilli. Ten days from beginning the tonsil showed some white covered ulcers, but there were no general or local symptoms.

CASE III.—Miss H.; sore throat; patches on right tonsil; headache. Temperature, 104°; malaise. Removed membrane. In two days better; fever down. On the fifth day after going out there were some general symptoms. Right tonsil showed follicular tonsillitis. Smear negative. Next day the tonsil was more covered; dirty white masses easily removed. Seemed like food particles. Dark-ground illumination showed a few spirillæ. Bacilli frequent. Diphtheria organism negative. Throat hardly sore. Temperature, 99°. Deep in tonsil was a white based ulcer with an intense red margin. The eighth day showed same throat condition without symptoms.

CASE IV.—H. S.; child, aged five years. Illness began with swelling of lower jaw on the right side. Third day later found a large, white, irregular patch on the left tonsil. Right tonsil showed enlarged white follicles. Diphtheria antitoxin given as precautionary measure (6000 units). Temperature as high as 102°.

Fourth day was better. Membrane unchanged. Temperature, 102°.

Fifth day the membrane was unchanged. Temperature, 102°.

Sixth day the membrane was smaller; spots on right tonsil. Temperature, 102°.

Seventh day the membrane was much smaller. Temperature normal. Spots nearly gone.

Ninth day there was no trace of membrane.

Smear here showed almost exclusively Vincent's organisms. Diphtheria organism negative. Membrane was multicolored, dirty, high, irregular, rather loose, and a foul ulcer underlay it.

CASE V.—Miss A. T.; nurse. Previously throat was positive for Vincent's organisms.

First day the throat was sore and swollen on the outside; not sore inside. Temperature, 98°.

Second day was the same. Temperature, 99°. Throat sore inside, (evening). Both tonsils showed thick, irregular white masses over ulcerated bases. Smears from white masses showed Vincent's organisms. Diphtheria organism negative.

Third day the soreness was greater. Temperature, 100°. (5000 units of antitoxin).

Fourth day the throat was a little better. Temperature, 100° at 8 A.M. and 101° at 8 P.M.

Fifth day was much better; throat swollen. Temperature, 99° at 8 A.M. and 100° at 8 P.M. Ulcers unchanged.

Sixth day was much better. Ulcers still present. Temperature at 8 P.M. 99.4°.

Seventh day the ulcers were less marked.

CASE VI.—Miss S.; aged twenty years; nurse. Sore throat off and on for two weeks. Headache, malaise, etc.

First day the temperature was 102°.

Second day the temperature was 102.8°. Right tonsil showed three white patches, one far behind the pillar. Smear showed both organisms of Vincent's, especially bacilli.

Third day she felt well. Temperature was normal. Throat was unchanged.

This case showed characteristic lack of paralleling clinical signs and pathology, also predominating bacilli as in membranous type.

These six cases certainly suffered from diseases having the fundamental points in common:

1 Characteristic serious-looking ulcers with characteristic membranes.

2. Symptoms, especially sore throat, mild out of all proportion to pathology.

3. Return to perfect subjective health a considerable time before ulcer disappeared.

4. Predominance in each case of organisms described by Vincent.

5. In two by special therapy and in three by special diagnostic technic; diphtheria and syphilis were respectively ruled out.

The following cases are not typical or characteristic:

CASE VII.—H. W.; aged nineteen years. First day had sore throat; the membrane on both tonsils was soft and easily removed. Smear showed long rods in preponderance; no spirillæ.

Second day the temperature was 103°. Culture showed staphylococci.

Fourth day the membrane was gone. Temperature was normal. Smear showed a few typical spirillæ. This case included because of the characteristic picture in the first smear suggesting the bacillus of Vincent. The predominance of rods agrees with the assertions concerning the diphtheroid type of Vincent's angina.

CASE VIII.—D. W. Young girl, aged sixteen years.

First day had fever, chills, bone pains, sore throat, follicular tonsillitis. Temperature was 101°. Pulse, 120. Patches developed on enlarged tonsils, later small white spots on cheeks, gums, and tongue. These had red areolæ. From careful smears of the centers, practically, exclusively, Vincent's organisms were found.

Twelfth day was about well.

The following cases with Case 5 are taken in connection with the routine examination made previously for normal flora.

CASE IX.—Bertha; three weeks before a routine smear was negative for Vincent's.

First day had sore throat; malaise.

Second day the temperature was 102.4°. Tonsils were large and covered by large gray areas; pink bordered. Smear from membrane showed Vincent's organisms predominating. Diphtheria bacilli negative.

Fifth day was better. Temperature was normal. Tonsils were large; gray patches present. Injected mouse with emulsion of membrane without result.

Seventh day the membrane had disappeared.

Eighth day, bouillon culture of streptococci from throat injected into mouse without result.

CASE X.—Miss N.; aged twenty years; nurse. Two weeks previously Vincent's organisms were found. Used hydrogen peroxide as gargle t. i. d. for one week.

First day had sore throat. Smear (general) showed Vincent's organisms. Smear of membrane showed only streptococci.

Second day the temperature was 103.6°.

Third day the temperature was 102°.

Fourth day the temperature was 98.4°. Membrane unchanged.

CASE XI.—Miss M.; three weeks previously found Vincent's organisms.

First day the throat was irritated.

Third day had sore throat. Temperature, 103°. Tonsil showed white spots.

Fourth day the temperature was 100°. Tonsils large. Spots very small. Smear showed Vincent's organisms.

Evidently Vincent's organisms, frequently normally present, may be found in the general throat smear and at the point of disease, or only in the general smear, or only at point of disease.

Under the usual cultural conditions employed in laboratories making routine twenty-four-hour reports, a positive or negative diagnosis of diphtheria as based on the growth of the bacillus pure or predominating can be made. The value of such a diagnosis depends upon the degree of accuracy with which a portion of the membrane from the throat is removed by a practitioner, retained upon the swab without contamination, and directly applied to the blood serum.

Practically all, as is well known, contain staphylococci and streptococci. Staphylococci or streptococci cultured pure or nearly so from a piece of membrane, especially if its surface is previously cleaned, may be considered as pathogenic for the case.

Smears from a membrane often give a much more definite diagnosis, as lurking contaminating organisms cannot cloud the picture.

Reports of staphylococcal or streptococcal growths from swabs received indiscriminately would appear to be of no value. The same conditions hold for other organisms more rarely seen in the throat pathology, which are culturable on ordinary media.

Vincent's organisms cannot be cultured by the ordinary methods (aërobic). The small percentages, less than one, reported of Vincent's organisms in routine work are probably made from smears of material from throats applied to the surface of media in especially large masses, but they are not growths.

By smears a diagnosis can easily be made. A large percentage of normal throats contain these organisms, as in the case of streptococci, but by careful differential smearing a conclusion can be reached as to the bacterial content of the membrane. In the case of mailed swabs there is nearly as much a question as to diagnostic value, as in the case of streptococci and staphylococci. However that may be, such a diagnosis would be much more frequently made than is usually imagined.

Certainly in many serious-looking anginas if the causative organisms are not those of Vincent's, at least the predominance of the latter in the picture of a smear, appear to be a sure guide to a diagnosis of great importance, prognostically and economically. Until by animal inoculation or special therapy their pathogenicity is

repudiated or substantiated, the sooner this guide is properly sought for the sooner will an important advance be made in this branch of medicine.

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SOME FACTS AND FALLACIES CONCERNING ABDOMINAL ADHESIONS AND BANDS.

By George G. Ross, M.D.,
AND
J. Bernhard Mencke, M.D.,
PHILADELPHIA.

With the continued development of abdominal surgery there has been an increasing appreciation of the importance of the normal activities and pathological conditions of the peritoneum. The recognition of gross lesions of this structure, such as the more evident forms of active peritonitis and the resultant inflammatory adhesions, antedates by far our knowledge of the conditions giving rise to them. The demonstration of the bacterial origin of peritoneal lesions and subsequent investigations as to the causation of such bacterial invasions have placed our knowledge of the more acute forms of peritoneal disease upon a firm basis.

A far more difficult problem presents itself when we consider peritoneal adhesions and bands for which it is impossible to ascertain a definite antecedent acute inflammatory lesion. The recognition of such structures is not a recent one. It has been stated that Virchow, in 1858, was the first to describe these structures more in detail, but at that time, of course, there was no basis for a correct opinion concerning their causation. For a long time after the beginning of abdominal surgery upon a larger scale the avoidance and treatment of acute peritonitis engrossed the attention of operators. Further and extended observation of early cases led to information concerning postoperative and postinflammatory adhesions and to efforts to determine their cause and to attempts at their prevention. A still later development of the matter was